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**A test of the external validity of focus group findings using
survey research and statistical inference**

Gillespie, Robert Marvin, Ph.D.

Iowa State University, 1992

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A test of the external validity of focus group findings
using survey research and statistical inference

by

Robert Marvin Gillespie

A Dissertation Submitted to the
Graduate Faculty in Partial Fulfillment of the
Requirements for the Degree of
DOCTOR OF PHILOSOPHY

Department: Professional Studies in Education
Major: Education (Adult and Extension
Education)

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Iowa State University
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1992

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TABLE OF CONTENTS

	<u>Page</u>
CHAPTER I. INTRODUCTION	1
Problem Statement	1
Research Question and Hypotheses	3
Assumptions	4
Limitations	5
Definitions	6
Significance	6
CHAPTER II. LITERATURE REVIEW	9
Background	9
The Quantitative-Qualitative Debate	10
Opposition to Generalization	15
Support for Generalization	17
Tests of Generalization	19
CHAPTER III. METHODOLOGY	21
Overview	21
The Focus Group Research	22
The Survey Research	24
Method of Comparison	39
CHAPTER IV. PRESENTATION OF DATA AND FINDINGS	42
Survey Response Rate	42
Categories of Findings	42
Findings Which Disagree	44

	<u>Page</u>
Findings Which Agree	47
Findings Which Neither Agree nor Disagree	65
Summary	66
CHAPTER V. CONCLUSIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH	69
The Research Hypotheses	69
Recommendations for Further Research	70
Suggestions for Improvement of the Focus Group Research	71
Suggestions for Improvement of the Survey Research	73
REFERENCES	74
APPENDIX A. FOCUS GROUP MODERATOR'S GUIDE	81
APPENDIX B. RECOMMENDED INTRODUCTIONS	84
APPENDIX C. FOCUS GROUP SUMMARY REPORT	87
APPENDIX D. SURVEY QUESTIONNAIRE	90
APPENDIX E. FIRST MAILING COVER LETTER	93
APPENDIX F. SECOND MAILING COVER LETTER	95
APPENDIX G. POSTCARD	97
APPENDIX H. SUMMARY OF RESPONSES	99
APPENDIX I. LETTER OF TRANSMITTAL FOR RESPONSE SUMMARY	102
APPENDIX G. HUMAN SUBJECTS RESEARCH APPROVAL	104

LIST OF TABLES

	<u>Page</u>
Table 1. Number of pieces mailed and responses	43
Table 2. Statistical summary of findings which disagree	44
Table 3. Frequency table for Question #2, "There are many providers of similar services to Iowa industry"	45
Table 4. Frequency table for Question #20, "I am not confident that my private sources of professional advice are accurate"	45
Table 5. Frequency table for Question #31, "I would expect to pay for ISU Extension services"	47
Table 6. Frequency table for Question #33, "I question the value of free advice"	47
Table 7. Statistical summary of findings which agree	48
Table 8. Frequency table for Question #1, "ISU Extension is a valuable resource for Iowa industry"	49
Table 9. Frequency table for Question #3, "It would be a good idea for ISU Extension to be more involved in economic development efforts"	50
Table 10. Frequency table for Question #4, "I am not satisfied with current economic development efforts in Iowa"	50
Table 11. Frequency table for Question #5, "I feel that ISU Extension workers treat my inquiries with respect"	51
Table 12. Frequency table for Question #6, "When I talk to ISU Extension, they listen"	51
Table 13. Frequency table for Question #7, "ISU Extension assistance is personalized (one-to-one)"	52
Table 14. Frequency table for Question #8, "ISU Extension assistance is unbiased"	53

	<u>Page</u>
Table 15. Frequency table for Question #9, "ISU Extension assistance is helpful"	53
Table 16. Frequency table for Question #10, "I think the Center for Industrial Research and Service (CIRAS) is a part of ISU Extension"	54
Table 17. Frequency table for Question #11, "I would like help finding qualified, industrious employees"	54
Table 18. Frequency table for Question #12, "I need good, up-to-date information on providing health care for employees"	55
Table 19. Frequency table for Question #13, "I need help identifying sources, other than banks, for funding"	56
Table 20. Frequency table for Question #14, "I believe Iowa businesses are poorly informed about Extension programs"	56
Table 21. Frequency table for Question #15, "ISU Extension should use repeated, frequent advertising to inform me of their services"	57
Table 22. Frequency table for Question #16, "News releases on ISU Extension programs would be helpful to me"	57
Table 23. Frequency table for Question #17, "Regular mailings on ISU Extension programs would be helpful to me"	58
Table 24. Frequency table for Question #18, "ISU Extension should help former Iowans return to Iowa by matching them to Iowa jobs"	58
Table 25. Frequency table for Question #21, "I need training to stay abreast of regulations"	59
Table 26. Frequency table for Question #22, "I do not usually go to the ISU Extension county office for specific information"	60

	<u>Page</u>
Table 27. Frequency table for Question #23, "I would prefer a toll-free telephone call to an ISU Extension specialist for specific information"	60
Table 28. Frequency table for Question #24, "The presence of the local county office is important to me"	61
Table 29. Frequency table for Question #25, "A directory of ISU Extension services and contacts would be useful"	61
Table 30. Frequency table for Question #27, "I would like to receive ISU Extension information in concise and specific printed materials"	62
Table 31. Frequency table for Question #28, "I would like ISU Extension offices to extend their hours"	62
Table 32. Frequency table for Question #29, "Most of my inquiries are made during regular business hours"	63
Table 33. Frequency table for Question #30, "I have used ISU Extension services at some time"	63
Table 34. Frequency table for Question #32, "I believe 'you get what you pay for'"	64
Table 35. Frequency table for Question #34, "ISU Extension should focus on its strengths and drop weak programs"	64
Table 36. Statistical summary of findings which cannot be said to agree nor disagree at the .05 level of significance	65
Table 37. Frequency table for Question #19, "I need training in legal matters"	66
Table 38. Frequency table for Question #26, "I would like more information provided on videotape"	66
Table 39. Summary of t-test comparisons for agreement, disagreement, and inconclusive outcomes	68

CHAPTER I. INTRODUCTION

Problem Statement

Many practitioners in the fields of educational needs assessment and of educational evaluation have, in recent years, embraced a relatively new research technique known variously as the "focus group" (Ziff, 1990), "focus group interview" (Lederman, 1990), "group depth interview" (Goldman & McDonald, 1987), "group interview" (Persico & Heaney, 1986), "focused interview" (Merton, Fiske, & Kendall, 1956), or, in European variations, "psychodynamic market research group" (Gordon & Langmaid, 1988) and "co-operative research" (Reason, 1988). "Focus group" and "focus group interview" seem prevalent, so those terms will be used here.

The procedure has much to recommend it to the educational researcher as an implement of inquiry, especially in the early or discovery stages of needs assessment, in developing understanding of observed phenomena, and in evaluating interventions. Many advocates claim it is also less costly than other forms of inquiry, with particular reference to conventional statistically-sampled survey methods. This point is arguable, with the more rigorous practitioners of focus group methodology citing equivalent or greater costs for focus group research and the less formal users claiming substantial economies (Daume, 1988; Sunenshine, 1991). It is clearly less

costly than a series of individual depth interviews with the same number of subjects and may produce more or better data (Greenbaum, 1991). Few argue with the contention that the procedure can produce findings much more quickly than either surveys or a series of individual interviews. With the profound increase in the rate of social, economic, political, and technological change in recent decades, prompt detection and response to change have become critically important.

Few deny the superior value of properly conducted focus group research in revealing beliefs, attitudes, and values, as an aid to understanding "implicit cultural knowledge", in providing in-depth or "thick" description, for designing more closely bounded survey research tools such as questionnaires, and in formulating hypotheses for quantitative testing (Calder, 1977; Erickson, 1986; Goldman & McDonald, 1988). However, the use of the findings of focus group research procedures to guide the development of programs for a broader audience has many critics (Greenbaum, 1987; Gruenwald, 1991; Stewart & Shamdasani, 1990). This criticism relates primarily to the issue of generalizability of focus group findings under the well-established criteria of statistical inference, because an inevitable feature of focus group research is that the samples are small and not selected at random from the population under study. There is also concern that dominant group members may influence findings disproportionately and

that unconscious biases of the moderator may affect the focus and interpretation of the discussion. These and other concerns about the external validity of focus group findings are certainly appropriate. If the findings of focus group research cannot be considered representative of a larger audience, the use of the procedure as an educational needs assessment tool is seriously impaired and its value to the research community is consequently reduced. Also, many of the current applications, both in education (Caffarella & O'Donnell, 1991; Kleiber & Holt, 1990), and in other fields such as consumer marketing (Muller, 1990), organizational development (Seidler, 1974), health care delivery (Bernstein, 1989), and library services (Baker, 1991) are potentially misleading.

Research Question and Hypotheses

The essential question to be asked in this study is whether or not focus group research findings are representative of the population from which the panel of interviewees is drawn. In quantitative, statistically sampled research, this property is referred to as external validity or population validity (Borg & Gall, 1989). (The term "generalizability" is used more often than "external validity" in epistemological discussions.)

The general hypothesis is that if the findings of rigorously conducted focus group research are externally valid, those findings will substantially agree with the findings of statistically sampled survey research in the same population. The hypothesis is applied to 33 separate findings from a focus group research report. "Agreement" to "disagreement" is operationalized on a six-point Likert scale, with one representing "strongly agree" and six representing "strongly disagree." Using any mean score between 1 and 3.5 on the scale as "agree" and any mean score between 3.5 and 6 as "disagree," the research hypothesis is, symbolically:

$$H_a: \mu < 3.5$$

and the null hypothesis is:

$$H_o: \mu \geq 3.5$$

An alpha level of .05 was selected as an appropriate level of significance for the test. The analysis will also identify survey items which significantly disagree with the focus group research findings as those items with mean scores significantly greater than 3.5.

Assumptions

The following assumptions were made:

- (1) The focus group research tested, which was planned and directed by an experienced, recognized authority on focus group investigation, is adequately rigorous

to produce findings which are representative of this type of inquiry.

- (2) The statements derived from the focus group findings accurately represent those findings when interpreted by the survey respondents.
- (3) The random systematic sample selected is a statistically valid representation of the focus group population.
- (4) The statistical procedures used for the analysis and comparison are appropriate.
- (5) History and maturation effects did not result in significant changes in the relevant opinions and attitudes of the population studied during the 90- to 120-day elapsed time between procedures.
- (6) That 3.5 represents the point of indifference on a Likert-type agree/disagree scale of one through six.

Limitations

The following limitations existed:

- (1) The geographic limit is the state of Iowa.
- (2) The survey instrument was not extensively tested for reliability and validity prior to use.
- (3) A theoretical basis for the generalizability of focus group research findings is not well established.

Definitions

External validity: The extent to which characteristics of a sample can be used to make inference to the population from which the sample is drawn (Sonquist & Dunkelberg, 1977).

Generalizability: The condition that characteristics found in a smaller group can be inferred to a larger group of which the smaller group is a representative part. The term is used here interchangeably with "external validity".

Transferability: The condition that characteristics found in one group can be inferred to another group.

Purposive sampling: Choosing subjects based on dimensions which contribute to understanding the population and which will provide an appropriate range of information for the purposes of the research. Some types of purposive samples are extreme or deviant cases, typical cases, maximum variation cases, critical cases, politically important or sensitive cases, and convenience cases (Patton, 1980).

Significance

The focus group interview is a very useful and revealing research methodology. It is arguably more valid than highly-structured questioning because the respondents can elucidate and the trained interviewer can interpret the responses and guide the interview in accordance with the requirements of the analysis. The interaction of the group typically produces

responses that are more candid and more richly detailed than survey data (Goldman & McDonald, 1987). Focus groups can often produce findings much more quickly than survey research and certainly more quickly and at less expense than a comparable series of individual interviews.

However, it is a naturalistic research methodology and, as such, is usually not recognized to be generalizable to a population beyond the group interviewed. Typical criticisms are that responses from members of the panel are, by design, not independent of each other and the responses of a dominant or reticent participant can possibly receive disproportionate weight in the analysis and that non-probability, purposive sampling is used most frequently, rendering findings not statistically generalizable to larger groups (Basch, 1987). Because of these concerns, the presentation of findings is almost always preceded by a disclaimer which warns against generalization beyond the subject population (Calder, 1977). Thus, the information acquired with the method can be useful in only limited ways. If, through this and similar empirical tests, the focus group could be shown to be a valid inferential technique or if the conditions under which inference can be drawn were better understood, that disclaimer might be removed from the findings of focus group research and the utility and value of the knowledge gained would be greatly enhanced.

This study also develops and utilizes a systematic approach to the testing of focus group findings using well-established techniques of statistical inference. Based upon the practical application of the method, suggestions for improvements are offered.

A disciplined, systematic approach to testing the generalizability of focus group findings will be useful in gathering empirical evidence on the subject and in designing tests of hypotheses about the phenomenon. Even if no generalizability is found, a rigorous method of verification could be very useful in improving survey research instrument design and in the quantification of focus group findings.

CHAPTER II. LITERATURE REVIEW

Background

The focus group or group depth interview has its early origins in the late 1930s, when social scientists began to develop concerns about the individual structured interview, especially with regard to the influence of the interviewer in setting boundaries and providing clues which might limit or influence the responses. Researchers like Carl Rogers (1942) began to develop and advocate "nondirective" techniques for acquiring information, while social scientists employed in World War II efforts began to apply the new concepts of group dynamics from theorists like Kurt Lewin (1948) in their efforts to reduce the effect of the interviewer. The seminal work on the "focussed interview" was published in 1946 (Merton) describing procedures developed largely by Robert K. Merton and Paul Lazarsfeld during studies for the United States Office of Facts and Figures (predecessor to the Office of War Information, now Voice of America), on the effectiveness of radio programs and appeals. Paul Lazarsfeld is generally cited as the principal protagonist of the method in the field of market research, where it gained wide acceptance, although most such commercial applications are considered proprietary and not reported in the scientific literature nor made available for peer review (Nelson &

Fronteczak, 1988). By the 1980s, focus groups had become the most popular technique for conducting market research (Coe & McLachlan, 1980). Meanwhile, Merton's pioneering work, The Focussed Interview--A Manual, originally distributed as a mimeographed document, was not published as a book until 1956 and only sold a few thousand copies before going out of print. The method was passed along undocumented among private-sector market research practitioners and otherwise little used in academic research until the late 1970s, when reports of focus group studies began to proliferate in the journals of health care, banking, public relations, and, especially, education. In the latter half of the 1980s, textbooks and manuals on the subject began to appear (Goldman & McDonald, 1987; Greenbaum, 1988; Krueger, 1988; Morgan, 1988; Stewart & Shamdasani, 1990). Robert Merton's seminal work is currently being reprinted.

The Quantitative-Qualitative Debate

The research methodologies compared in this study are representative of two broad approaches to the acquisition of knowledge which are often the subject of an ongoing debate about their appropriateness and virtue. The focus group research is an example of qualitative research and the statistically sampled survey questionnaire is a quantitative approach.

Most of the issues in the debate derive from the often contradictory philosophical paradigms of positivism and that set of postpositivist axioms variously referred to as the qualitative, naturalistic, phenomenological, hermeneutic, or humanistic paradigm (Lincoln & Guba, 1985). The term "qualitative" is probably the most common term currently applied to postpositivist-oriented research because it contrasts neatly as an antonym to the quantitative designation generally applied to the positivist paradigm. However, the term "naturalistic" better describes the postpositivist paradigm and will be used consistently here.

The major assumptions which influence the choice of quantitative (positivist) or naturalistic (postpositivist) research methodology are as follows:

(1) The positivist perceives the nature of reality to be unique and fragmentable, resulting in an explanatory tactic that separates, analyzes, and reduces the world to basic particles of atoms and molecules, a process sometimes called Cartesian reductionism (Gould, 1987). The naturalist's view is that realities are multiple and holistic, so that they cannot be studied in the absence of their context. These contrasting positions are evident in the survey researcher's effort to hold all "variables" but the independent variable constant versus the focus group moderator's intense involvement and effort to encourage complex interaction among

the interviewees. Positivist reduction is exemplified in the methodology of this study by the reduction of the narrative focus group summary to a series of discrete statements for the survey research questionnaire.

(2) The positivist perceives the inquirer and the object of inquiry to be discrete and independent of each other. The naturalist accepts that the inquirer and the subject inevitably interact and influence each other. Thus, the quantitative researcher attempts to prevent interaction with the subject while the naturalistic researcher intentionally interacts with the informant. The impersonal nature of the postal contact and assurance of anonymity in the survey design contrasts boldly with the personal interaction of the focus group moderator and the participants.

(3) The objective of the positivist inquirer is to develop a body of knowledge that is true without regard to time and context (nomothetic knowledge). This implies an independent social reality which the naturalist denies (Smith & Heshusius, 1986). The naturalist seeks to develop "working hypotheses" that describe the individual case (ideographic knowledge) (Guba, 1990). The quantitative researcher seeks prediction while the naturalistic researcher seeks understanding. However, if empirical tests indicate that focus group findings can be nomothetic, they would then be clearly appropriate for prediction or generalization.

(4) The positivist paradigm asserts that inquiry is value-free by virtue of the objective methodology employed. The naturalist view is that all inquiry is value-laden in that the inquirer's values affect the choice of problem and the boundaries chosen to select and limit relevant data and to interpret it and that values inherent in the context also affect the responses. Thus, the naturalist accepts that knowledge gained cannot be fully objective and does not discredit focus group findings on the basis of the moderator's potential influence. All research is "influenced" by the inquirer.

While epistemological arguments may rage, many practitioners seek to sidestep the philosophical issues by specifying the nature of the knowledge sought as the appropriate determinant of methodology. Tesch (1990) suggests that research which utilizes numerical data be deemed quantitative and that which predominantly uses words be deemed qualitative (naturalistic). She does concede that some overlap occurs but offers the definition for sake of simplicity since a comprehensive description is elusive and becomes complex. Kirk and Miller (1986, p. 9) suggest that qualitative research denotes "any research distinguished by the absence of counting." Van Maanen (1979, p. 19) defines qualitative research as "an array of interpretive techniques which seek to describe, decode, translate and otherwise come

to terms with the meaning, not the frequency, of certain more or less naturally occurring phenomena in the social world."

Others feel that the proper nature of any research is determined (and consequently appropriately defined) by the purpose or intent of the research. For inquiry that is explanatory, theory-generating, or which seeks to achieve linguistic description, naturalistic methods are generally most appropriate (Tesch, 1990). For research which is confirmatory or quantitatively descriptive, quantitative methods are indicated. The confirmation that focus group findings can be generalizable would expand the utility of focus group research into this realm.

Although historical researchers have always employed a naturalistic point of view, the recent development of naturalistic methods of inquiry is largely an outgrowth of behavioral research, where investigators found the constraints of quantitative methods, especially the preconception inherent in the hypothetico-deductive approach, often rendered them impotent in studying the complexities of human behavior and social interactions. If empirical evidence shows that naturalistic focus group research can have the predictive power of more constrained positivistic methods such as the sample survey, our ability to acquire knowledge about the social world would be significantly expanded.

Opposition to Generalization

The literature on focus group research contains unequivocal support for the contention that results of such research should not be used to make inferences about larger populations. Examples are:

Gruenwald (1991) says focus groups "should not be used as a basis for decision-making. Other, more refined, methods should come into play here" (p. 16).

Stewart and Shamdasani (1990) say, "Because it is inappropriate to generalize far beyond the members of focus groups, the sampling frame need be only a good approximation of the population of interest" (p. 20).

Greenbaum (1988) says, ". . . any information gained is qualitative and cannot be projected to the universe . . ." (p. 24).

Morgan (1988) says, "Using focus groups to learn about the full range of experiences and perceptions in a broad population can be a fool's errand" (p. 11).

Even Krueger (1988), who argues for "cautious generalizations," specifies that "there is a risk in using focus group data to generalize to a population because the sample is not necessarily intended to be reflective of the entire population" (p. 43).

Cohen and Engleburg (1989) say, "The most seductive aspect of focus group research is the temptation to use the

raw data results as the basis for final decision-making. . . . It should not substitute for more significant and substantive quantitative research" (p. 19).

Palshaw (1990) declares that, "Small-sample studies are likely to be statistically worthless and are better used to generate ideas and refine questionnaires for a larger study" (p. 92).

Berlamino (1990) describes the Warner-Lambert Company's efforts to "avoid using qualitative research as a substitute for appropriate quantitative studies" (p. 59).

Gelb and Gelb (1989) discuss inappropriate selection of research methods and state that often "focus group discussions are used when quantitative data are needed" (p. 72).

Nasser (1988) says, ". . . focus groups have their limits and should be avoided as a substitute for an opinion survey. More importantly, they do not provide projectable estimates" (p. 34).

Byers and Wilcox (1991) suggest that, in order to generalize from focus group findings, "Researchers must assume whatever is being investigated is so uniformly distributed that it does not matter much where one 'dips' into the population" (p. 68).

Support for Generalization

Despite this clearly pervasive perception of a highly questionable external validity for focus group interview findings, conflicting support for the use of focus group data to infer to population universes for purposes of program design and major decision-making is easy to find. Goldman and McDonald (1987), speaking of focus group studies, say, "Many are intended to serve as a basis for marketing decisions rather than simply methodological ones. It is legitimate and, indeed, often desirable to use qualitative research in this manner, providing the limitations are understood and the results are prudently applied" (p. 19). Morgan (1988) says, "There is no a priori reason to assume that focus groups, or any other qualitative techniques, require supplementation or validation with quantitative techniques" (p. 11). Krueger (1988) writes, with regard to predictive or convergent validity of focus group findings, "My suggestion is to make cautious generalizations" (p. 44). Darrell R. Griffin, Vice President of Research Media, Inc. of Cambridge, MA, suggests that it is sometimes prudent to test the findings of focus group studies using one-on-one interviews. He recommends "finding and interviewing four or five members of the population from which the focus group was chosen. If the individual interviews yield information similar to the focus group information, you can be quite confident with your

findings" (Zemke, 1978, p. 55). Manning and Hoek (1990) describe focus groups as a "somewhat informal method of assessing and generalizing [emphasis added] from the honest perceptions of a limited number of people" (p. 7). Examples of practice from the literature are:

Muller (1990) describes how a major toy company tests new toy designs with focus groups before contracting with Hong Kong manufacturers for major production runs for the Christmas season.

Cowan (1990) describes the use of focus groups to decide on types of software programs to develop for marketing on CD-ROM media.

Grunig (1990) used the findings of focus group research to design a mental health program.

Bernstein (1989) used focus group data to redesign hospital billing procedures.

Lyons (1989) used focus groups to "measure" public awareness of an organization.

Lindenmann (1988) reports that focus groups "are becoming an accepted strategy for measuring PR programs" (p. 26).

Fannin (1988) reports that Suzuki of America Automotive Corporation redesigned the marketing program for the Samurai vehicle because "focus group research showed that all types of buyers were attracted to the Samurai" (p. 46).

Lee (1982) used focus groups to assess the continuing education needs of rural women in Missouri.

Heimann-Ratain, Hanson, and Peregoy (1985) used focus groups to design a smoking prevention program.

Jacobi (1991) describes the use of focus groups to guide student housing management.

Baker (1990) used focus groups to select library services which are important to business users.

Tests of Generalization

Despite this disparity between recommended practice and actual usage, there has been very little research into the external validity of the method. Fern (1983) reported only one study testing focus group assumptions. That study (Reynolds & Johnson, 1978) compared the findings of 20 focus groups with a confirmatory mail survey of 2000 female members of Market Facts' Consumer Mail Panel and found only one contradiction in thirty items compared. Ward (1989) compared the findings of knowledge, attitude, and practice surveys (KAP surveys) used by family planning researchers with the findings of twelve focus group sessions conducted with participants drawn from the same population and found them comparable for "a majority of the variables." Ward, Bertrand, and Brown (1991) reviewed Ward (1989) and two other sets of KAP surveys and focus groups in which the populations were controlled only

as to nation of residence and found that "results from the focus groups are highly consistent with those from surveys" (Ward et al., 1991, p. 283) but went on to say that the focus group "is not appropriate where the findings need to be generalized with precision to the larger population but in many situations it may be appropriate in guiding program efforts." Stouffer (1930) statistically compared case history analyses with a research questionnaire but the research questionnaire was not derived from the case history. Scores derived by judges from the case history analyses were compared quantitatively with corresponding questionnaire scores. Wilhelmi (1987) used both focus group and survey methods but the populations were not held constant. Numerous others (McMillan, 1989; Tipton, 1986; Davis, 1986; Mueller, 1985; Crane, 1985) use both focus groups and survey research in combination but do not perform an orderly comparison of the findings.

As Nelson and Fronteczak (1988) point out, "Existing knowledge about processes at work in focus groups is limited both in depth and breadth. Indeed, except for this study and one or two others, literature on focus groups is prescriptive and unsupported by rigorous research" (p. 47). This condition continues to exist in 1992.

CHAPTER III. METHODOLOGY

Overview

In 1991, the Vice-Provost for Iowa State University (ISU) Extension commissioned a well-known practitioner of focus group research to learn about the perceived needs of the clients, both current and potential, of ISU Extension programs. The information was sought as a guide to the redesign of existing programs and delivery systems. In view of the repeated cautions against using the findings of focus group research for major decisions because of its questionable external validity (Basch, 1987; Berlamino, 1990; Cohen & Engleberg, 1989; Gelb & Gelb, 1989; Greenbaum, 1988; Greenwald, 1991; Krueger, 1988; Merton, 1987; Morgan, 1988; Nasser, 1988; Palshaw, 1990; Stewart & Shamdasani, 1990), it seemed appropriate to the author to verify that the findings were indeed representative of the larger population of current and potential ISU Extension clients. Such a validation, properly designed for statistical inference to the target population, could also serve as an empirical test of the generalizability of focus group research findings and provide a step toward a broader utility for focus group research methodology.

The Focus Group Research

The focus group research project was designed and conducted according to the process described in the practitioner's book (Krueger, 1988).

A series of four group interviews was planned, each in a diverse area of the state of Iowa (except for the campus client interviews), for each of six ISU Extension constituency groups. Those groups were: business and industry, agriculture, communities, families, 4-H and youth, and on-campus users of services from ISU Extension's Office of Continuing Education. Of the four groups conducted within each constituency, two groups were composed of frequent users of ISU Extension services and two groups were composed of infrequent users of ISU Extension services. A separate analysis was performed and reported for each constituency group. The results of the four business and industry focus groups only are the subject of this research.

Candidates for participation in the group interviews were recruited by telephone from a list of names submitted by the extension area directors in the four areas of the state. The interviews were conducted in Des Moines, Waterloo, Storm Lake, and Tama, Iowa. Those candidates who agreed to participate received letters confirming the time and location of the interview. Locations selected were "neutral zones" (not ISU Extension facilities) such as restaurant meeting rooms or

community facilities such as libraries and schools. Meetings were scheduled from 9:00 a.m. to 11:00 a.m. or 1:00 p.m. to 3:00 p.m. Typically, ten to fourteen participants were invited to achieve a group of six to ten, allowing for "no-shows." In keeping with usual private-sector practice (Greenbaum, 1988), they were offered an honorarium of \$50.00 for their participation. Refusal rates were not recorded but were around 50 percent (two calls for one acceptance). No-shows ranged from 10 to 25 percent of those accepting. Actual interviewees were ". . . both men and women and were primarily smaller operators of business and industry with a mix of categories including feed mills, bankers, hospitals, manufacturers, home-based businesses and others" (Krueger, 1991, p. 2).

Two-person research teams were formed from a list of employees of ISU Extension who volunteered to conduct the interviews. They were provided with a copy of *Focus groups: A practical guide for applied research* by Richard A. Krueger, and Dr. Krueger conducted a one-day training session for the research teams at ISU. One team member served as moderator, guiding and facilitating the interview from a moderator's guide (see Appendix A for "Focus Group Questions"). The other team member served as "assistant moderator," taking notes on the conversations and recording the full procedure on audio tape. At the beginning of the interview, the moderator

offered a somewhat standardized introduction chosen by the moderator from six options supplied by the analyst (see Appendix B). At the end of the interview, the assistant moderator provided a brief review of the notes and asked the participants for any additions or corrections.

After the interviewees had left, the moderator and assistant moderator conducted a "debriefing session" to share their observations and confirm, change or add to the interview notes. These notes, along with typed verbatim transcriptions of the audio tapes and the tapes themselves, were then submitted to the analyst (the commissioned practitioner) for analysis and reporting.

After analysis of all four focus groups, a draft report was provided to the moderators for review, comment, and return to the analyst. From this draft, the analyst prepared a summary and final report to the Vice-Provost, which was issued in October, 1991 (see Appendix C).

The Survey Research

Upon release of the focus group report, the summary statement of findings was used to extract a list of 33 terse statements describing the opinions or beliefs of the target population. (Two additional questions were used to identify non-users of ISU Extension and to identify respondents who wished to receive a summary of the responses.) For example,

the sentence from the summary of focus group findings, "Extension is seen as a beneficial and valued resource in a crowded and competitive environment," was converted to two statements as follows: "ISU Extension is a valuable resource for Iowa industry," and "There are many providers of similar services to Iowa industry." The sentence, "There were a number of focus group participants who were not satisfied with the economic development efforts taking place in Iowa and felt that ISU Extension could be more effective than other agencies," from the summary report was converted to the two statements, "It would be a good idea for ISU Extension to be more involved in economic development efforts," and "I am not satisfied with current economic development efforts in Iowa." The text of the summary report, with the corresponding derivative statements from the questionnaire, follows.

Focus group report text: "Extension is seen as a beneficial and valued resource in a crowded and competitive environment."

Question 1. ISU Extension is a valuable resource for
Iowa industry.

Question 2. There are many providers of similar services
to Iowa industry.

Focus group report text: "There were a number of focus group participants who were not satisfied with the economic development efforts taking place in Iowa and felt that ISU

Extension could be more effective than other agencies. People in the areas of agriculture and business/industry have had some negative experiences with other agencies."

Question 3. It would be a good idea for ISU Extension to be more involved in economic development efforts.

Question 4. I am not satisfied with current economic development efforts in Iowa.

Focus group report text: "They feel when they talk to ISU Extension that they have someone who will listen. Extension, they feel, does listen to them."

Question 6. When I talk to ISU Extension, they listen.

Focus group report text: "They don't mind asking a question of an extension worker because they are not made to feel stupid and the staff member addresses the question with respect."

Question 5. I feel that ISU Extension workers treat my inquiries with respect.

Focus group report text: "Business and industry are impressed with the help they receive from Extension. It is personalized, unbiased and helpful. Extension staff work with local business people one-to-one at the work place and nobody else did that. That was very important. The point came out repeatedly about the benefits of unbiased research information. The third party perspective of Extension was

important. A recurring theme was the personalized and capable help they have received for [sic] ISU Extension staff, often in one-to-one consultations."

Question 7. ISU Extension assistance is personalized
(one-to-one).

Question 8. ISU Extension assistance is unbiased.

Question 9. ISU Extension assistance is helpful.

Focus group report text: "CIRAS received high marks and was respected but most focus group participants did not know that it was a part of ISU Extension. One participant indicated that the banker wouldn't help with a loan but with help from CIRAS in developing a business plan that they then did get the loan."

Question 10. I think the Center for Industrial Research
and Service (CIRAS) is a part of ISU
Extension.

Focus group report text: "Three major concerns of the business people were heard.

1. Finding employees to do the job. They wanted to know if Extension had any connection with the job service and they wanted help in screening employees in order to find qualified people who wanted to work."

Question 11. I would like help finding qualified,
industrious employees.

Focus group report text: "2. Health care for employees--being able to keep up-to-date and make good decisions about providing health care."

Question 12. I need good, up-to-date information on providing health care for employees.

Focus group report text: "3. Financing--getting financing or working with local banks that don't want to take the risk. Some would like help in finding other banks or using other funding sources such as family, SBA or others to line up financing. They don't expected [sic] Extension to give them money, but they would like help in knowing where to go."

Question 13. I need help identifying sources, other than banks, for funding.

Focus group report text: "Participants wanted to know what was happening, who [sic] to call, and how to get help. These business people were largely unaware of ISU Extension opportunities for business and industry."

Question 14. I believe Iowa businesses are poorly informed about Extension programs.

Focus group report text: "Participants felt that Extension needed to advertise in the traditional manner within business and industry. This means that Extension identifies the message, uses it repeatedly and frequently as any other vendor of services would do."

Question 15. ISU Extension should use repeated, frequent advertising to inform me of their services.

Focus group report text: "They encouraged Extension to work harder at keeping services of ISU Extension on their minds. News releases or regular mailings would also be helpful."

Question 16. News releases on ISU Extension programs would be helpful to me.

Question 17. Regular mailings on ISU Extension programs would be helpful to me.

Focus group report text: "As a Des Moines participant said, 'Extension is one of the best kept secrets'."

(See Question 14 above.)

Focus group report text: "An interesting idea emerged from several of the focus groups. Some participants feel that former Iowa residents would like to come back to Iowa, but they don't have jobs. Extension could help in coordinating potential workers with potential employers."

Question 18. ISU Extension should help former Iowans return to Iowa by matching them to Iowa jobs.

Focus group report text: "Legal matters and regulations were of concern and represent a potential area for future workshops sponsored by ISU Extension."

Question 19. I need training in legal matters.

Focus group report text: "Some felt that they contacted the best CPA or the best attorney to give them guidance, but they still had a question in their mind whether or not they were getting accurate information. These are smaller companies and they are trying to branch out and make new changes to find different markets."

Question 20. I am not confident that my private sources of professional advice are accurate.

Focus group report text: "Also, participants were concerned about staying on top of regulations."

Question 21. I need training to stay abreast of regulations.

Focus group report text: "The role of the county staff person was discussed in detail, especially from some in agricultural business. They wanted the county person to be available but did not expect the county staff person to be a specialist--they typically didn't go to the county person for specific answers about problems."

Question 22. I do not usually go to the ISU Extension county office for specific information.

Focus group report text: "They would rather have a direct line to a specialist on campus or an 800 number where they can tap into that kind of information."

Question 23. I would prefer a toll-free telephone call to an ISU Extension specialist for specific information.

Focus group report text: "They would like to have the county person involved in economic development or community problem solving."

(See Question 3 above.)

Focus group report text: "Several different views were expressed on the importance of the local extension office. These views were often related to the nature of their business. Those with agricultural oriented businesses tended to see the local contact as important but those in manufacturing were less concerned about local contact."

Question 24. The presence of the local county office is important to me.

Focus group report text: "A few wanted a local contact in an extension office whereas most seemed to prefer access to experts, usually via phone, regardless of where the expert was in the organization. Hierarchies or chains of command are not seen in a favorable light. These focus group participants prefer to go to whomever is capable of solving the problem."

(See Questions 22, 23, and 24 above.)

Focus group report text: "ISU Extension might put out a directory of opportunities within CIRAS or Extension citing what is available, where to call, whom to call and other

details of the opportunities. These would be beneficial to business and industry and help them obtain assistance in a timely manner."

Question 25. A directory of ISU Extension services and contacts would be useful.

Focus group report text: "Also suggested were videotapes, concise and specific printed materials and user-friendly technology."

Question 26. I would like more information provided on videotape.

Question 27. I would like to receive ISU Extension information in concise and specific printed materials.

Focus group report text: "Business and industry were generally satisfied with existing Extension office hours, but they encouraged flexibility. While other client groups had some preference for expanded hours or noon-time hours, the prevailing view among business representatives was for normal business hours. That is the time they make their own inquiries and they were pleased with status quo hours."

Question 28. I would like ISU Extension offices to extend their hours.

In this unique case, disagreement by the t-test (a significant positive t-value) will indicate agreement between the focus group finding and the derivative question. While it

is a somewhat awkward exception, it was preferred over the more direct conversion "I would not like ISU Extension to extend their hours" as more representative of the meaning of the focus group finding, and because negative items are frequently misinterpreted by respondents who tend to overlook the negative word (Borg & Gall, 1989).

Question 29. Most of my inquiries are made during
regular business hours.

Focus group report text: "The topic of charging fees for services provoked considerable discussion. In business and industry, there is sensitivity about being in competition with other people who provide the same type of services as a business. There was no consensus on which direction to go other than some were saying we should charge a fee for some kinds of things and not have the amount excessive.

Business and industry people *unfamiliar with ISU Extension* [emphasis added] are accustomed to paying for help, and they are surprised when they receive helpful assistance without charge from Extension. They don't expect to receive assistance for free."

Question 30. I have used ISU Extension services at some
time.

(Note that this question does not seek to verify a focus group finding *per se*. It was necessary in order to identify the responses of non-users of ISU Extension services to Question

#31 because the focus group finding to which that question refers is limited to "people unfamiliar with ISU Extension.")

Question 31. I would expect to pay for ISU Extension services.

Focus group report text: "Business and industry people usually expect to pay for things and the amount you pay is related to the quality of what you are getting. If it is free, it is probably no good or of limited quality. It seems to be instinctive to them that good things are not given away free and quality costs."

Question 32. I believe you "get what you pay for."

Question 33. I question the value of free advice.

Focus group report text: "Evaluate strengths and weaknesses and find the niche for ISU Extension in business and industry. Focus on strengths and drop areas of weakness."

Question 34. ISU Extension should focus on its strengths and drop weak programs.

The converted statements were reviewed by several colleagues in an informal pretest to minimize distortion of meaning in the conversion.

A six-point Likert-type scale as described in Borg and Gall (1989) with the number one representing "strongly agree" and the number six representing "strongly disagree" was attached to each converted statement, along with a "don't know" option. The six-point scale was chosen to preclude an

explicit middle category and avoid losing information about the direction in which some respondents might lean (Converse & Presser, 1986). The "don't know" option was included to make the choices exhaustive (Zikmund, 1982). "Don't know" answers were treated as missing data and excluded in administering the t-test procedure. The last question was a yes/no option offering a summary of responses to the survey to respondents. These questions were set up on a one-page (both sides) questionnaire form (see Appendix D).

The sample was selected from the population of Iowa businesses using a database maintained by the Center for Industrial Research and Service (CIRAS). CIRAS is an agency of ISU Extension to Business and Industry. The database is continuously updated by the CIRAS staff through direct personal contact and Postal Service address corrections service. It was determined that linear systematic sampling would produce a representative sample (Borg & Gall, 1939; Hinkle, Wiersma, & Jurs, 1988; Warwick & Lininger, 1975) with a sampling fraction of 18:1. Beginning with a computer-selected random number between one and eighteen, each successive eighteenth entry on the database was selected for the survey, producing 312 names.

A modification of the "total design method" (TDM) put forth by Dillman (1978) was used to implement the mailing. A first mailing of the numbered questionnaire and cover letter

(see Appendix E) to the 312 businesses selected produced a return of 134 usable questionnaires (42.9% of the total sample). Because the database used is subject to continuous review and updating, only four questionnaires (1.3%) were returned because of incorrect address or because the business had been discontinued or moved out of state. Two addresses were corrected and included in the second mailing one month later for a total of 176 questionnaires re-mailed. A different cover letter (see Appendix F), stressing the importance of the recipient's input, accompanied the second mailing, and this questionnaire carried the same identifying number plus one digit to identify it from the first mailing. Both letters explained that the identifying numbers were to identify nonrespondents only and would be removed from the questionnaire after aggregation of the data to assure anonymity. An addressed, postage-paid return envelope was also included with each mailing. The second mailing was followed in one week with 159 postcards (see Appendix G) to nonrespondents urging completion and return of the questionnaire and again emphasizing the importance of including the views of individual subjects. The postcard also suggested a collect telephone call to the researcher for a replacement questionnaire if necessary, but no telephone calls were received. While returns influenced by the postcard cannot be separated from the second mailing alone, the

combination produced a total return of 84 completed questionnaires (26.6% of the total sample). One of these questionnaires was marked all sixes and was excluded as invalid so the total return rate for usable questionnaires was 217 or 69.5%.

The certified mail and telephone follow-ups advocated by Dillman (1978) were not performed since the return rate was considered acceptable and further imposition on the sample group not justified. Heberlein and Baumgartner (1978) conducted a review of 214 mail questionnaire studies that utilized one or more follow-up mailings and found the mean rate of return to be 60.6%. Miller (1991) conducted a comparison of return rates for 200 questionnaires mailed to leaders from the fields of religion, business, labor, civic affairs, and political government in several northeastern U.S. cities. Of the 200 mailed to business leaders, a return rate of 51% was achieved. The highest return rate they found was 67% from religious leaders. This suggests that the response of 217 out of 312 is adequate for valid statistical inference according to general research community practice.

Responses to the questionnaire were aggregated and evaluated for mean, standard deviation, standard error, variance, frequency and missing values (missing values were omitted) using the Statistical Package for the Social Sciences (SPSS)[®] software package resident on the Iowa State

University HDS/AS 9180 computer. Questions which were not answered or were answered "Don't Know" were treated as missing data and excluded from the analysis. Procedure "FREQUENCIES" and subcommands "VARIABLES=Q1 TO Q35" and "STATISTICS=ALL" were employed to produce the statistics. Histograms were also produced for review using subcommand "HISTOGRAM" (Norusis, 1990).

As an additional check on the homogeneity of the sample group (in addition to calculating and observing the standard error of the mean for each item), a random sample of half of the responses was selected using SPSS procedure "SAMPLE .50". The means of those responses were compared with the other half of the sample (the responses not selected by the procedure "SAMPLE .50") using SPSS procedure "CORRELATION VARIABLES = SAMPMEAN BALMEAN", where SAMPMEAN identifies the sampled means and BALMEAN identifies the other half of the sample.

After the data were aggregated, a mailing was prepared and sent to the 122 respondents who requested a summary of results by answering "yes" to Question 35 ("I would like to receive a summary of the responses to this survey"). The summary included the mean, standard deviation, and percentage of respondents who did not answer each question (see Appendix H). The summary was accompanied by a letter of transmittal (see Appendix I) expressing gratitude for their participation. A brief explanation of the statistical measures in the

summary, a concise statement of the research question and finding, and an offer to discuss the results with interested respondents were also included in the letter of transmittal.

Finally, the identifying numbers on the questionnaires were cut off and discarded in compliance with the terms of the Human Subjects Research Committee Approval for the research project (see Appendix J).

Method of Comparison

The formal comparison between the focus group findings and the mean response on the questionnaire items derived from them was effected using the assumption that any mean less than 3.5 (mid-scale between 1="agree" and 6="disagree") represents agreement. Likewise, any mean greater than 3.5 represents disagreement. Using procedure "T-TEST" and subcommand "PAIRS," the mean answer to each question (except Questions 30 and 35) was compared to 3.5, the mid-point of the "agree/disagree" scale of six on the questionnaire. The algorithm applied was:

$$t = \frac{\bar{X} - 3.5}{s\bar{X}}$$

This value was compared to a critical t-value of ± 1.645 (± 1.684 for Question 31) to establish a .05 level of significance, using SPSS procedure "T-TEST PAIRS = Q1 TO Q34 WITH CUTPT" and entering the 3.5 division criterion

between "agree" and "disagree" with procedure "COMPUTE CUTPT = 3.5". (Questions 30 and 35 were for administrative purposes only and not tested.) Thus, the decision criteria used were:

- (1) If the magnitude of difference between the mean score on the agree/disagree scale of a questionnaire statement and the value 3.5 produces a t-value more negative than -1.645, then that statement is in significant (.05 level) agreement with the corresponding focus group finding. Note that a critical t-value of -1.684 was used on Question 31. Because responses to this question were limited to "non-users of ISU Extension", the number of cases used in the comparison was only 45. While the critical value of t is constant for samples larger than 121 cases (120 degrees of freedom), it rises as the number of cases declines below 121 so the value of 1.684, appropriate for 40 degrees of freedom (Fisher & Yates, 1974), was applied for this question only.
- (2) If the magnitude of difference between the mean score on the agree/disagree scale of a questionnaire statement and the value of 3.5 produces a t-value more positive than 1.645 (1.684 on Question 31), then that statement is in significant (.05 level)

disagreement with the corresponding focus group finding.

- (3) If the magnitude of difference between the mean score on the agree/disagree scale of a questionnaire statement and the value 3.5 produces a t-value between -1.645 and 1.645 (-1.684 and 1.684 on Question 31), then that statement cannot be said to agree nor disagree with the corresponding focus group finding at the .05 level of significance.

The aggregated responses to each item were also reviewed individually in search of revealing tendencies.

CHAPTER IV. PRESENTATION OF DATA AND FINDINGS

Survey Response Rate

Of the initial mailing of 312 questionnaires, two were returned with incorrect addresses, one addressee was no longer doing business, and one addressee had moved out of state. There were 134 (42.9% of the total sample) usable responses to the first mailing.

One month after the first mailing, a second mailing of 176 questionnaires to nonrespondents (including two corrected addresses from the first mailing) was dispatched. Seventeen responses to the second mailing had been received one week later, when the follow-up postcard was mailed to the remaining 159 nonrespondents. This combination of second mailing and postcard produced 84 responses, of which 83 (26.6% of the total sample) were usable questionnaires. One questionnaire was marked all sixes and excluded from the evaluation per Churchill (1983). Thus, a total of 217 questionnaires (69.5% of the total sample) was used in the analysis. Table 1 is a summary of response rates.

Categories of Findings

The t-test comparison of survey responses to the focus group findings resulted in three categories:

- 1) Findings that disagree at the .05 level of significance. These are items which result in a t-value

Table 1. Number of pieces mailed and responses

Mailing	Number mailed	Number rejected	Valid responses	% of total
First letter and questionnaire	312	4	134	42.9
Second letter and questionnaire	176	1	83	26.6
Postcard	154	-- ^a	-- ^a	-- ^a
Total response		5	217	69.5

^aIt was not possible to determine the extent of any effect the postcard had on the return of the second questionnaire.

greater than 1.645 (1.684 on Question 31) when compared to an agree/disagree criterion of 3.5, the midpoint of the scale.

2) Findings that agree at the .05 level of significance. These are items which result in a t-value less than -1.645 (-1.684 on Question 31) when compared to the criterion value of 3.5.

3) Findings which cannot be said to disagree nor agree at the .05 level of significance. These are items which result in a t-value between 1.645 and -1.645 (1.684 and -1.684 on Question 31) when compared to the criterion value of 3.5.

A review and discussion of each item within those three categories follows.

Findings Which Disagree

Findings of the focus group research which disagreed with corresponding survey findings are summarized in Table 2.

Question #2: "There are many providers of similar services to Iowa industry." The mean of this item was 4.1407, and the comparison with the 3.5 agree/disagree criterion produced a positive t-value of 5.45. Thus, the generalization that Extension-like services to business and industry are seen as a "resource in a crowded and competitive environment" as stated in the focus group report is refuted by the survey finding.

Question #20: "I am not confident that my private sources of professional advice are accurate." This item, intended to verify the focus group statement, "Some felt that they contacted the best CPA or the best attorney to give them guidance, but they still had a question in their mind whether or not they were getting accurate information," produced a mean of 4.015. The t-test resulted in a positive t-value of

Table 2. Statistical summary of findings which disagree

Ques- tion	Valid cases (N)	Mean	Standard deviation	Standard error	t-value
#2	135	4.141	1.367	.118	5.45**
#20	200	4.015	1.529	.108	4.76**
#31	45	4.000	1.225	.183	2.74**
#33	204	4.324	1.446	.101	8.13**

**Significant at the 0.01 level.

Table 3. Frequency table for Question #2, "There are many providers of similar services to Iowa industry"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	7	3.2	5.2	5.2
2	7	3.2	5.2	10.4
3	31	14.3	23.0	33.3
4	28	12.9	20.7	54.1
5	39	18.0	28.9	83.0
6	23	10.6	17.0	100.0
Missing	82	37.8		
Total	217	100.0	100.0	

4.76, indicating a significant disagreement with the focus group finding at the .05 level.

Question #31: "I would expect to pay for ISU Extension services." The responses on this item were restricted to "non-users" of ISU Extension services because it was intended

Table 4. Frequency table for Question #20, "I am not confident that my private sources of professional advice are accurate"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	13	6.0	6.5	6.5
2	25	11.5	12.5	19.0
3	35	16.1	17.5	36.5
4	43	19.8	21.5	58.0
5	41	18.9	20.5	78.5
6	43	19.8	21.5	100.0
Missing	17	7.8		
Total	217	100.0	100.0	

to evaluate the focus group finding that "Business and industry people *unfamiliar with ISU Extension* are accustomed to paying for help, and they are surprised when they receive helpful assistance without charge from Extension. They don't expect to receive assistance for free." Question #30, "I have used ISU Extension services at some time," was included in order to identify those respondents who were "unfamiliar with ISU Extension." This was done by selecting only those responses with values greater than three (disagree) on Question #30 for inclusion in the analysis of Question #31. Thus, only 45 cases were included in the comparison, and the critical value of t adjusted accordingly to 1.684. The mean for non-users of 4.000 produced a positive t -value of 2.74 when compared to the criterion value of 3.5, confirming a significant disagreement with the focus group finding (Table 5).

Question #33: "I question the value of free advice." This mean of 4.324 produces a positive t -value of 8.13 when compared to the criterion mean of 3.5, indicating a significant disagreement with the focus group finding that the target population believes that "If it is free, it is probably no good or of limited quality" (see Table 6).

Table 5. Frequency table for Question #31, "I would expect to pay for ISU Extension services"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
2	7	12.3	15.6	15.6
3	4	7.0	8.9	24.4
4	24	42.1	53.3	77.8
5	2	3.5	4.4	82.2
6	8	14.0	17.8	100.0
Missing	12	21.1		
Total	57	100.0	100.0	

Table 6. Frequency table for Question #33, "I question the value of free advice"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	12	5.5	5.9	5.9
2	13	6.0	6.4	12.3
3	27	12.4	13.2	25.5
4	49	22.6	24.0	49.5
5	51	23.5	25.0	74.5
6	52	24.0	25.5	100.0
Missing	13	6.0		
Total	217	100.0	100.0	

Findings Which Agree

Of the 33 questions on the survey, 28 were found to be in agreement with the corresponding focus group finding at $p < .05$ level of significance. Those questions are summarized in Table 7 and a review follows:

Table 7. Statistical summary of findings which agree

Question	Valid cases (N)	Mean	Standard deviation	Standard error	t-value
#1	189	2.175	1.170	.085	-15.58**
#3	193	2.689	1.345	.097	-8.38**
#4	202	3.015	1.451	.102	-4.75**
#5	162	2.043	1.011	.079	-18.33**
#6	160	2.194	1.061	.084	-15.57**
#7	158	2.184	1.052	.084	-15.73**
#8	155	2.303	1.170	.094	-12.74**
#9	171	2.246	1.152	.088	-14.24**
#10	139	2.101	1.331	.113	-12.39**
#11	197	3.147	1.573	.112	-3.15**
#12	205	3.020	1.603	.112	-4.29**
#13	206	3.136	1.745	.122	-2.99**
#14	197	2.162	1.171	.083	-16.03**
#15	206	3.194	1.527	.106	-2.87**
#16	211	2.493	1.251	.086	-11.69**
#17	209	2.483	1.256	.087	-11.70**
#18	194	2.979	1.513	.109	-4.79**
#21	211	2.867	1.310	.090	-7.02**
#22	212	2.524	1.568	.108	-9.07**
#23	204	2.647	1.620	.113	-7.52**
#24	196	3.260	1.685	.120	-1.99*
#25	215	2.014	1.198	.082	-18.19**
#27	200	2.555	1.325	.094	-10.09**
#28	148	4.777	1.009	.083	15.40** ^a
#29	199	1.985	1.152	.082	-18.55**
#30	199	2.709	1.683	.119	-6.63**
#32	205	3.044	1.594	.111	-4.10**
#34	179	2.821	1.590	.119	-5.71**

^aInverted question, positive value indicates agreement.

*Significant at the 0.05 level.

**Significant at the 0.01 level.

Question #1: "ISU Extension is a valuable resource for Iowa industry." With a negative t-value of -15.58, the "agree" response of 87% shows agreement between the focus group finding and the survey research question and leaves little doubt that there exists a positive perception of value for ISU Extension within the target population.

Table 8. Frequency table for Question #1, "ISU Extension is a valuable resource for Iowa industry"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	67	30.9	35.4	35.4
2	57	26.3	30.2	65.6
3	41	18.9	21.7	87.3
4	15	6.9	7.9	95.2
5	7	3.2	3.7	98.9
6	2	.9	1.1	100.0
Missing	28	12.9		
Total	217	100.0	100.0	

Question #3: "It would be a good idea for ISU Extension to be more involved in economic development efforts." The t-test also indicates firm agreement between the focus group finding and the corresponding survey question with a value of -8.38 (see Table 7).

Question #4: "I am not satisfied with current economic development efforts in Iowa." A widespread dissatisfaction with existing economic developments is confirmed (see Table 10).

Question #5: "I feel that ISU Extension workers treat my inquiries with respect." While agreement between the research methods is again confirmed, the number of "Don't Know" responses is elevated. This would be expected because

Table 9. Frequency table for Question #3, "It would be a good idea for ISU Extension to be more involved in economic development efforts"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	45	20.7	23.3	23.3
2	42	19.4	21.8	45.1
3	60	27.6	31.1	76.2
4	30	13.8	15.5	91.7
5	6	2.8	3.1	94.8
6	10	4.6	5.2	100.0
Missing	24	11.1		
Total	217	100.0	100.0	

Table 10. Frequency table for Question #4, "I am not satisfied with current economic development efforts in Iowa"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	34	15.7	16.8	16.8
2	50	23.0	24.8	41.6
3	45	20.7	22.3	63.9
4	35	16.1	17.3	81.2
5	28	12.9	13.9	95.0
6	10	4.6	5.0	100.0
Missing	15	6.9		
Total	217	100.0	100.0	

Table 11. Frequency table for Question #5, "I feel that ISU Extension workers treat my inquiries with respect"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	52	24.0	32.1	32.1
2	69	31.8	42.6	74.7
3	30	13.8	18.5	93.2
4	6	2.8	3.7	96.9
5	3	1.4	1.9	98.8
6	2	.9	1.2	100.0
Missing	55	25.3		
Total	217	100.0	100.0	

of the increased likelihood of "Don't Know" responses from non-users of Extension services to this question (Table 11).

Question #6: "When I talk to ISU Extension, they listen." Again, the increase in missing responses (26 percent) is the result of the inclusion of non-users in the sample, but agreement with the focus group findings is clear (see Table 12).

Table 12. Frequency table for Question #6, "When I talk to ISU Extension, they listen"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	47	21.7	29.4	29.4
2	56	25.8	35.0	64.4
3	43	19.8	26.9	91.2
4	9	4.1	5.6	96.9
5	3	1.4	1.9	98.7
6	2	.9	1.2	100.0
Missing	57	26.3		
Total	217	100.0	100.0	

Question #7: "ISU Extension assistance is personalized (one-to-one)." Significant agreement with the focus group findings is supported (see Table 13).

Question #8: "ISU Extension assistance is unbiased." Agreement with the focus group results is confirmed (see Table 14).

Question #9: "ISU Extension assistance is helpful." This item also confirms the derivative finding from the focus group report (see Table 15).

Question #10: "I think the Center for Industrial Research and Service (CIRAS) is a part of ISU Extension." While the number of "Don't Know" responses to this question is

Table 13. Frequency table for Question #7, "ISU Extension assistance is personalized (one-to-one)"

Response	Frequency	Percent	Valid percent	Cum. percent
1	49	22.6	31.0	31.0
2	51	23.5	32.3	63.3
3	43	19.8	27.2	90.5
4	11	5.1	7.0	97.5
5	3	1.4	1.9	99.4
6	1	.5	.6	100.0
Missing	59	27.2		
Total	217	100.0	100.0	

Table 14. Frequency table for Question #8, "ISU Extension assistance is unbiased"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	46	21.2	29.7	29.7
2	45	20.7	29.0	58.7
3	45	20.7	29.0	87.7
4	13	6.0	8.4	96.1
5	2	.9	1.3	97.4
6	4	1.8	2.6	100.0
Missing	62	28.6		
Total	217	100.0	100.0	

Table 15. Frequency table for Question #9, "ISU Extension assistance is helpful"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	53	24.4	31.0	31.0
2	54	24.9	31.6	62.6
3	43	19.8	25.1	87.7
4	14	6.5	8.2	95.9
5	4	1.8	2.3	98.2
6	3	1.4	1.8	100.0
Missing	46	21.2		
Total	217	100.0	100.0	

quite high (78), the number of those who erroneously believe CIRAS is not a part of ISU Extension is quite low (22), resulting in a finding of agreement with the focus group generalization (see Table 16).

Table 16. Frequency table for Question #10, "I think the Center for Industrial Research and Service (CIRAS) is a part of ISU Extension"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	59	27.2	42.4	42.4
2	44	20.3	31.7	74.1
3	14	6.5	10.1	84.2
4	12	5.5	8.6	92.8
5	5	2.3	3.6	96.4
6	5	2.3	3.6	100.0
Missing	78	35.9		
Total	217	100.0	100.0	

Question #11: "I would like help finding qualified, industrious employees." The hypothesis that the survey research questions will confirm the focus group findings is again supported (see Table 7).

Table 17. Frequency table for Question #11, "I would like help finding qualified, industrious employees"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	41	18.9	20.8	20.8
2	31	14.3	15.7	36.5
3	42	19.4	21.3	57.9
4	41	18.9	20.8	78.7
5	25	11.5	12.7	91.4
6	17	7.8	8.6	100.0
Missing	20	9.2		
Total	217	100.0	100.0	

Table 18. Frequency table for Question #12, "I need good, up-to-date information on providing health care for employees"

Response	Frequency	Percent	Valid percent	Cum. percent
1	52	24.0	25.4	25.4
2	33	15.2	16.1	41.5
3	36	16.6	17.6	59.0
4	41	18.9	20.0	79.0
5	29	13.4	14.1	93.2
6	14	6.5	6.8	100.0
Missing	12	5.5		
Total	217	100.0	100.0	

Question #12: "I need good, up-to-date information on providing health care for employees." The focus group finding is supported (see Table 7).

Question #13: "I need help identifying sources, other than banks, for funding." The agreement between the focus group finding and the question is supported (see Table 19).

Question #14: "I believe Iowa businesses are poorly informed about Extension programs." Agreement is soundly confirmed by the t-value of -16.03 and 87.8 percent agreement (see Table 20).

Question #15: "ISU Extension should use repeated, frequent advertising to inform me of their services."

Table 19. Frequency table for Question #13, "I need help identifying sources, other than banks, for funding"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	57	26.3	27.7	27.7
2	24	11.1	11.7	39.3
3	39	18.0	18.9	58.3
4	31	14.3	15.0	73.3
5	30	13.8	14.6	87.9
6	25	11.5	12.1	100.0
Missing	11	5.1		
Total	217	100.0	100.0	

Agreement with the focus group finding is confirmed (see Table 7).

Question #16: "News releases on ISU Extension programs would be helpful to me." Agreement is confirmed (see Table 7).

Table 20. Frequency table for Question #14, "I believe Iowa businesses are poorly informed about Extension programs"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	67	30.9	34.0	34.0
2	68	31.3	34.5	68.5
3	38	17.5	19.3	87.8
4	15	6.9	7.6	95.4
5	5	2.3	2.5	98.0
6	4	1.8	2.0	100.0
Missing	20	9.2		
Total	217	100.0	100.0	

Table 21. Frequency table for Question #15, "ISU Extension should use repeated, frequent advertising to inform me of their services"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	30	13.8	14.6	14.6
2	49	22.6	23.8	38.3
3	44	20.3	21.4	59.7
4	35	16.1	17.0	76.7
5	30	13.8	14.6	91.3
6	18	8.3	8.7	100.0
Missing	11	5.1		
Total	217	100.0	100.0	

Table 22. Frequency table for Question #16, "News releases on ISU Extension programs would be helpful to me"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	55	25.3	26.1	26.1
2	60	27.6	28.4	54.5
3	49	22.6	23.2	77.7
4	35	16.1	16.6	94.3
5	8	3.7	3.8	98.1
6	4	1.8	1.9	100.0
Missing	6	2.8		
Total	217	100.0	100.0	

Table 23. Frequency table for Question #17, "Regular mailings on ISU Extension programs would be helpful to me"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	55	25.3	26.3	26.3
2	61	28.1	29.2	55.5
3	48	22.1	23.0	78.5
4	29	13.4	13.9	92.3
5	14	6.5	6.7	99.0
6	2	.9	1.0	100.0
Missing	8	3.7		
Total	217	100.0	100.0	

Question #17: "Regular mailings on ISU Extension programs would be helpful to me." Agreement is confirmed (see Table 7).

Question #18: "ISU Extension should help former Iowans return to Iowa by matching them to Iowa jobs." Agreement is confirmed (see Table 7).

Table 24. Frequency table for Question #18, "ISU Extension should help former Iowans return to Iowa by matching them to Iowa jobs"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	42	19.4	21.6	21.6
2	39	18.0	20.1	41.8
3	39	18.0	20.1	61.9
4	42	19.4	21.6	83.5
5	19	8.8	9.8	93.3
6	13	6.0	6.7	100.0
Missing	23	10.6		
Total	217	100.0	100.0	

Table 25. Frequency table for Question #21, "I need training to stay abreast of regulations"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	41	18.9	19.4	19.4
2	38	17.5	18.0	37.4
3	69	31.8	32.7	70.1
4	40	18.4	19.0	89.1
5	17	7.8	8.1	97.2
6	6	2.8	2.8	100.0
Missing	6	2.8		
Total	217	100.0	100.0	

Question #21: "I need training to stay abreast of regulations." Agreement is confirmed (see Table 7).

Question #22: "I do not usually go to ISU Extension county office for specific information." Agreement is confirmed (see Table 7).

Question #23: "I would prefer a toll-free telephone call to an ISU Extension specialist for specific information." Findings are in agreement (Table 7).

Question #24: "The presence of the local county office is important to me." Findings are confirmed (see Table 7).

Question #25: "A directory of ISU Extension services and contacts would be useful." Agreement is confirmed (see Table 7).

Table 26. Frequency table for Question #22, "I do not usually go to the ISU Extension county office for specific information"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	74	34.1	34.9	34.9
2	53	24.4	25.0	59.9
3	30	13.8	14.2	74.1
4	24	11.1	11.3	85.4
5	17	7.8	8.0	93.4
6	14	6.5	6.6	100.0
Missing	5	2.3		
Total	217	100.0	100.0	

Table 27. Frequency table for Question #23, "I would prefer a toll-free telephone call to an ISU Extension specialist for specific information"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	70	32.3	34.3	34.3
2	40	18.4	19.6	53.9
3	33	15.2	16.2	70.1
4	32	14.7	15.7	85.8
5	11	5.1	5.4	91.2
6	18	8.3	8.8	100.0
Missing	13	6.0		
Total	217	100.0	100.0	

Question #28: "I would like ISU Extension offices to extend their hours." The positive t-value of 15.40 indicates disagreement with this statement, and this disagreement is interpreted as agreement with the focus group finding that,

Table 28. Frequency table for Question #24, "The presence of the local county office is important to me"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	43	19.8	21.9	21.9
2	29	13.4	14.8	36.7
3	34	15.7	17.3	54.1
4	38	17.5	19.4	73.5
5	28	12.9	14.3	87.8
6	24	11.1	12.2	100.0
Missing	21	9.7		
Total	217	100.0	100.0	

Table 29. Frequency table for Question #25, "A directory of ISU Extension services and contacts would be useful"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	94	43.3	43.7	43.7
2	61	28.1	28.4	72.1
3	39	18.0	18.1	90.2
4	10	4.6	4.7	94.9
5	6	2.8	2.8	97.7
6	5	2.3	2.3	100.0
Missing	2	.9		
Total	217	100.0	100.0	

"While other client groups had some preference for expanded hours or noon-time hours, the prevailing view among business representatives was for normal business hours." Thus, agreement is confirmed (Table 7).

Table 30. Frequency table for Question #27, "I would like to receive ISU Extension information in concise and specific printed materials"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	53	24.4	26.5	26.5
2	50	23.0	25.0	51.5
3	54	24.9	27.0	78.5
4	25	11.5	12.5	91.0
5	12	5.5	6.0	97.0
6	6	2.8	3.0	100.0
Missing	17	7.8		
Total	217	100.0	100.0	

Table 31. Frequency table for Question #28, "I would like ISU Extension offices to extend their hours"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	1	.5	.7	.7
3	13	6.0	8.8	9.5
4	46	21.2	31.1	40.5
5	45	20.7	30.4	70.9
6	43	19.8	29.1	100.0
Missing	69	31.8		
Total	217	100.0	100.0	

Question #29: "Most of my inquiries are made during regular business hours." Agreement is confirmed (see Table 7).

Question #30: Because this question was only used to identify non-user respondents for the evaluation of Question

Table 32. Frequency table for Question #29, "Most of my inquiries are made during regular business hours"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	83	38.2	41.7	41.7
2	68	31.3	34.2	75.9
3	29	13.4	14.6	90.5
4	11	5.1	5.5	96.0
5	3	1.4	1.5	97.5
6	5	2.3	2.5	100.0
Missing	18	8.3		
Total	217	100.0	100.0	

#31, testing for agreement with the focus group findings was not appropriate (Table 33).

Question #32: "I believe 'you get what you pay for'." Agreement is confirmed (see Table 7).

Table 33. Frequency table for Question #30, "I have used ISU Extension services at some time"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	60	27.6	30.2	30.2
2	54	24.9	27.1	57.3
3	28	12.9	14.1	71.4
4	23	10.6	11.6	82.9
5	9	4.1	4.5	87.4
6	25	11.5	12.6	100.0
Missing	18	8.3		
Total	217	100.0	100.0	

Table 34. Frequency table for Question #32, "I believe 'you get what you pay for'"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	51	23.5	24.9	24.9
2	29	13.4	14.1	39.0
3	42	19.4	20.5	59.5
4	42	19.4	20.5	80.0
5	25	11.5	12.2	92.2
6	16	7.4	7.8	100.0
Missing	12	5.5		
Total	217	100.0	100.0	

Table 35. Frequency table for Question #34, "ISU Extension should focus on its strengths and drop weak programs"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	47	21.7	26.3	26.3
2	44	20.3	24.6	50.8
3	27	12.4	15.1	65.9
4	30	13.8	16.8	82.7
5	17	7.8	9.5	92.2
6	14	6.5	7.8	100.0
Missing	38	17.5		
Total	217	100.0	100.0	

Question #34: ISU Extension should focus on its strengths and drop weak programs." Agreement is confirmed (see Table 7).

Findings Which Neither Agree nor Disagree

There were two statements of the 33 in the survey which could not be said to agree nor disagree at the significance level of $p < .05$. They are listed in Table 36.

Question #19: "I need training in legal matters" was included to evaluate, in part, the focus group finding, "Legal matters and regulations were of concern and represent a potential area for future workshops sponsored by ISU Extension." The mean response of 3.668 produces a t-value of 1.59 with a probability of .113, not quite reaching the .05 level of significance (see Table 36).

Question #26: "I would like more information provided on videotape." This item was intended to verify, in part, the focus group report statement, "Also suggested were videotapes, concise and specific printed materials and user-friendly technology." The mean of 3.583, while in the direction of

Table 36. Statistical summary of findings which cannot be said to agree nor disagree at the .05 level of significance

Ques- tion	Valid cases (N)	Mean	Standard deviation	Standard error	t-value
#19	199	3.668	1.491	.106	1.59
#26	194	3.583	1.522	.109	.75

Table 37. Frequency table for Question #19, "I need training in legal matters"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	16	7.4	8.0	8.0
2	31	14.3	15.6	23.6
3	45	20.7	22.6	46.2
4	48	22.1	24.1	70.4
5	29	13.4	14.6	84.9
6	30	13.8	15.1	100.0
Missing	18	8.3		
Total	217	100.0	100.0	

Table 38. Frequency table for Question #26, "I would like more information provided on videotape"

Response	Fre- quency	Per- cent	Valid percent	Cum. percent
1	20	9.2	10.3	10.3
2	29	13.4	14.9	25.3
3	44	20.3	22.7	47.9
4	50	23.0	25.8	73.7
5	21	9.7	10.8	84.5
6	30	13.8	15.5	100.0
Missing	23	10.6		
Total	217	100.0	100.0	

disagreement, produces an insufficient t-value of .75 (probability of .451) when compared with the criterion mean, not reaching the .05 level of significance (see Table 36).

Summary

The total score for agreement between the focus group report findings and the questionnaire items derived from those findings is thus, 27 items in agreement (82%), four in disagreement (12%), and two inconclusive (6%) (see Table 39).

Table 39. Summary of t-test comparisons for agreement, disagreement, and inconclusive outcomes

Question #	Agree	Disagree	Inconclusive
1	x		
2		x	
3	x		
4	x		
5	x		
6	x		
7	x		
8	x		
9	x		
10	x		
11	x		
12	x		
13	x		
14	x		
15	x		
16	x		
17	x		
18	x		
19			x
20		x	
21	x		
22	x		
23	x		
24	x		
25	x		
26			x
27	x		
28	x ^a		
29	x		
30 ^b			
31 ^c		x	
32	x		
33		x	
34	x		

^aInverted question. A significantly positive t-value indicates agreement with the focus group report finding.

^bOnly used to identify non-users for Question 31.

^cNon-users of ISU Extension services only.

CHAPTER V. CONCLUSIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH

The focus group interview is a popular and informative research methodology, but its use is limited because the external validity or generalizability of findings derived by the method is questionable. If the findings could be inferred to a population with a measured confidence interval, they could be more useful.

The Research Hypotheses

Thirty-three statements were derived directly from a report of focus group research findings. These 33 statements were incorporated into a survey instrument which asked respondents about their agreement with each statement on a six-point Likert scale. The respondents to which the survey instrument was mailed were randomly selected and were not members of the focus groups.

Responses to the 33 items were tested for agreement or disagreement with the findings of the focus group research. It was hypothesized that there would be significant ($p < .05$) agreement between the focus group findings and the survey findings.

Among the 33 items tested, 27 were found to reject the null hypothesis. These items had mean scores of significantly

less than 3.5 and thus support the research hypothesis that findings would agree ($H_a: \mu < 3.5$). Four items were found to disagree with the focus group research report (means significantly greater than 3.5) and two items were inconclusive (means not significantly different from 3.5). Thus, 82 percent of the information derived from the focus group research can be inferred to the target population with a measured confidence interval. For the purposes of most educational program planners, this is probably inadequate but a case could be made for reliance on data with comparably limited external validity as better than no data at all, depending on several factors:

- (1) The consequences of an error are not grave or are easily rectified after implementation.
- (2) Time or other constraints do not allow for the application of statistically valid inferential techniques.

However, the evidence is not sufficient to warrant a suggestion that the usual disclaimer against the generalization of focus group research beyond the subject population be removed because of the relatively high probability that the findings do not accurately represent characteristics of the population under study. (In this case, 12% of the findings were erroneous and 6% could not be confirmed.)

Recommendations for Further Research

The predominance of agreement between the focus group findings and the survey research in this study does suggest that the extensive use of focus group research in program planning, product design, and in other decision-making as an inferential technique has some justification. However, additional improved empirical testing is warranted.

Suggestions for Improvement of the Focus Group Research

The focus group research on which this study is based was carried out using generally accepted practices and was supervised by a recognized authority in the field. However, for the purposes of statistical evaluation of external validity a more rigorous purposive sampling procedure is suggested. Specifically, it is recommended that:

- (1) The same database be used in selecting candidates purposively for the focus group research as is used to select the statistically representative random sample. The use of names submitted by area Extension office directors resulted in a sampling procedure that was more "judgmental," as described by Warwick and Lininger (1975), than purposive. The availability of a database which is comprehensive

enough for statistical representation while including the necessary information on the characteristics of the population specified by the purposive sampling plan may present difficulties. Such characteristics might include details such as sex, age, job title or description, size of employing firm, span of control of managers, nature of business etc. and would not usually all be included in a directory or other source. If this problem arises, a pre-offer screening interview should be developed to select the focus group participants. As explained by Arnold (1970), "What is required to protect against bias is to lay out the dimensions along which the cases may vary and then examine at least one example of each type of case" (p. 148).

- (2) Increased honoraria should be considered as a way to reduce self-selection within the focus group sample through refusals and "no-shows." Tuckel, Lippo, and Kaplan (1992) surveyed 677 participants and found money to be the single most important reason for attending focus group research sessions.

Suggestions for Improvement of the Survey Research

While the criteria for rigor in survey research are well-established and were generally observed in this study, the procedure used to convert the focus group findings to agree/disagree statements might benefit from a more disciplined conversion procedure. A content analysis technique such as that suggested by Kassirjian (1977) could be applied but, since the focus group report itself is effectively a product of content analysis, a less cumbersome and complex procedure would probably be adequate to minimize losses or changes in meanings. A variation on the Nominal Group Technique (NGT), as described by Lederhaus and Decker (1987), using a panel of judges to convert the focus group report findings to survey questions independently and then an iterative series of edits to refine the final set of questions would probably suffice.

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APPENDIX A. FOCUS GROUP MODERATOR'S GUIDE

BUSINESS AND INDUSTRY

1. Tell us your name, where you live, and how long you've lived in the community.
2. Think back to a time when you had a problem concerning your business or industry. You needed information or help solving a problem. You needed help but your immediate friends and neighbors were not able to help. What was the problem and how did you get your answer?
3. What did you consider when you were deciding where to go for help or information?
 - or: What prompted your choice of sources?
 - or: What did you think about when you decided where to go?
4. What we're interested in today is what people think about ISU Extension. What would it take to get you to regularly turn to ISU Extension for assistance?
5. Before we continue, I'd like you to rate ISU Extension. Here is a rating sheet where we ask you to indicate how ISU Extension IS NOW . Please take a few minutes and complete the rating. (Administer the rating)

Follow-up questions:

- 5a. Do you have strong feelings about any of the items on the rating sheet? If so, please tell us about them.
- 5b. Would changes in any of these characteristics influence your use of ISU Extension?

Distribute and Discuss Extension Information Sheet

6. What makes ISU Extension different from other places where you might receive information or receive assistance in solving problems?
7. Do you feel that ISU Extension has been of benefit to you or people in your community?

If yes, could you give me an example?

Probes: What about economic.
What about social.
What about educational.

If no or silent, were you disappointed with ISU Extension information, services or programs?

8. What could ISU Extension do to be more helpful to Iowa residents?
Probes: What about changes in topics or content of instruction?
What about changes in the presentation or delivery of information?
9. What could ISU Extension do to be more accessible to Iowa residents?
Probes: What about new or different technology in teaching or communications?
What about the location of staff?
What about office hours?
What about the skills of employees?
What about use of mass media (radio, newspapers, etc.)?
10. Increasingly state and local budgets are limited. Some have suggested that those who use ISU Extension programs pay for the services they receive. What advice do you have for us on this topic?
Probe: What programs or services do you think people would be willing to pay for?
What about extension bulletins or publications?
What about training fees for workshops?
What about individual consulting on problems?
11. What advice would you offer to those who are making decisions about the future of Extension?

Our purpose in this discussion is to find out about how Iowa State University Extension can better serve the residents of Iowa. Have we missed anything?

APPENDIX B. RECOMMENDED INTRODUCTIONS

Recommended Introductions

Good evening and I would like to offer a warm welcome to all of you who have come here tonight to be part of a focus group team. I would like to introduce myself. I'm and I work with Iowa State University Extension. Assisting me is This session is very important to us because you're a part of a systematic state-wide effort to find out more about beliefs and experiences with Iowa State University Extension. You were selected specifically because of your past experience (or limited experience) with Extension. Just to set some ground rules so that we can work effectively as a focus group team I would like to ask that only one person speak at a time. This will assist us in transcribing your comments from our two-hour session. I would ask also that you respond by telling us about situations that you've had with Extension but leave out names of employees who were involved in that situation. I'll be asking you a variety of questions and there are no right or wrong answers. We just want your perspective of Iowa State University Extension. Well, we're ready to begin with our first question. I'd like you to respond in a round-robin manner. The question is this: When you hear the words Iowa State University Extension, what comes to mind?

* * * * *

I'm glad you're here this evening. My name is and I'm with Iowa State University Extension. Assisting me is This is one of 24 focus groups around the state of Iowa. Some of you may not know what a focus group is. We intend to focus on some specific questions about how ISU Extension might deliver better services and opportunities to the people of Iowa. You have been selected because you are special. You have some special ideas and opinions and we would like to hear those. We'll be recording your comments on tape so we can transcribe them more readily a little later. We'd like it if you would give us complete information to the questions. We really do value what you have to say. We'll begin in a round-robin fashion to the first question. The question is: When you hear the words Iowa State University Extension, what comes to mind?

* * * * *

Hi I'm and I'm with Iowa State University. Assisting me is who is helping with recording our discussion. We're also taping the session so we can do a better job of catching all the things you tell us. This is one of 24 focus groups around the state that are having these discussions and we are interested in your comments about what Iowa State Extension is doing or could be doing. There are no right or wrong answers. If you have positive comments that's fine and if you have negative comments that's also just fine. We're going to be focusing our discussion on the programs and services of Extension as opposed to the employees of Extension. We have just a couple ground rules. We want to use first names in our discussion. Because we're tape recording we ask that you talk one at a time to keep from garbling the tape. And remember that there are no right or wrong answers. We'll be meeting for about 2 hours and if you need additional refreshments just help yourself. I'd like to go around the table for our first question. The question is: When you hear the words Iowa State University Extension, what comes to mind?

* * * * *

Good evening and welcome to our session tonight. My name is and my assistant is We are both from ISU Extension and we are here tonight to learn from you about how you would like to receive information and services from Extension. To help us in our discussion tonight I would like to introduce a few ground rules. First, we'll be informal and on a first-name basis, however let's not be so informal that we interrupt each other or have several people talking at the same time. We will be taping this tonight so we can be sure to get all of your responses to get as much detail as we can. We are interested in both positive and negative comments. But we will focus on Extension as an organization and not on specific personalities or individuals. So please keep that in mind as we discuss. To begin I would like to ask this question: When you hear the words Iowa State University Extension, what comes to mind?

* * * * *

Good evening and welcome to this focus group discussion. We have 24 groups throughout Iowa which are discussing the role of Extension and how to make Iowa a better place to live. You are one of those groups and we would like to have your input as to how we might make this system better. My name is and I will be your moderator for the evening. My assistant is who will be taking notes. We're interested in your insights and both the positive and negative things that you have to say about Iowa State University. We've invited you here because we value your perceptions and we certainly want you all to contribute to this session. There are no right or wrong answers. We are looking for your opinion. We value your opinions and we want you to feel comfortable in bringing those opinions to us. In order to set some structure to our discussion we've set some ground rules. First of all we ask that one person talk at a time and that will allow us to get the information on tape and not lose any important comments. We would like to be on a first-name basis. Our session will last about 2 hours. During that time if you feel a need to get up, stretch, or get refreshments, please feel free to move about and then rejoin us. For our first question we would like to go around the table. The question is: When you hear the words Iowa State University Extension, what comes to mind?

* * * * *

ISU Extension's purpose is to provide educational programs that assist people in improving the way they live and work. Many communities offer a wide variety of opportunities. Perhaps you are familiar with some of the educational programs Extension offers in areas of nutrition/diet & health, family development, agricultural management, 4-H and youth development, fire service education, business-industrial & community development, off campus credit programs and others. Periodically Extension tries to determine how we are doing. How are we serving you, our clients or potential clients. This is one of 24 meetings throughout Iowa in which we are visiting with both occasional and frequent Extension users. We feel it's very important to ask you how we are doing and how we might improve our assistance to you. That's the purpose of tonight's meeting.

APPENDIX C. FOCUS GROUP SUMMARY REPORT

Iowa Business and Industry

Summary

• The Image of ISU Extension

Extension is seen as a beneficial and valued resource in a crowded and competitive environment. There were a number of focus group participants who were not satisfied with the economic development efforts taking place in Iowa and felt that ISU Extension could be more effective than other agencies. People in the areas of agriculture and business/industry have had some negative experiences with other agencies. They feel when they talk to ISU Extension that they have someone who will listen. Extension, they feel, does listen to them. They don't mind asking a question of an extension worker because they are not made to feel stupid and the staff member addresses the question with respect.

• Extension is personalized, unbiased and helpful

Business and industry are impressed with the help they receive from Extension. It is personalized, unbiased and helpful. Extension staff work with local business people one-to-one at the work place and nobody else did that. That was very important. The point came out repeatedly about the benefits of unbiased research information. The third party perspective of Extension was important. A recurring theme was the personalized and capable help they have received for ISU Extension staff, often in one-to-one consultations.

CIRAS received high marks and was respected but most focus group participants did not know that it was a part of ISU Extension. One participant indicated that the banker wouldn't help with a loan but with help from CIRAS in developing a business plan that they then did get the loan.

• Three major concerns of business people

Three major concerns of the business people were heard.

1. **Finding employees to do the job.** They wanted to know if Extension had any connection with the job service and they wanted help in screening employees in order to find qualified people who wanted to work.

2. **Health care for employees**--being able to keep up-to-date and make good decisions about providing health care.

3. **Financing**--getting financing or working with local banks that don't want to take the risk. Some would like help in finding other banks or using other funding sources such as family, SBA or others to line up business financing. They don't expect Extension to give them money but they would like help in knowing where to go.

• Rating ISU Extension

Participants were invited to rate 18 items that are ingredients of service based organizations. In addition each respondent was asked to identify the three items that are most important to them. Based on this ranking, participants consider it important that ISU programs provide accurate information about important topics that the individual is personally concerned about. The topics and accuracy of presentation were of considerable greater attention than the manner by which this information is presented, or the appearances of offices, extension workers or materials.

• More promotion of Extension needed

Participants wanted to know what was available, who to call, and how to get help. These business people were largely unaware of ISU Extension opportunities for business and industry. Participants felt that Extension needed to advertise in the traditional manner within business and industry. This means that Extension identifies the message, uses it repeatedly and frequently as any other vendor of services would do. They encouraged Extension to work harder at keeping services of ISU Extension on their minds. News releases or regular mailings would also be helpful. As a Des Moines participant said: "Extension is one of the best kept secrets."

• An idea for a new program effort

An interesting idea emerged from several of the focus groups. Some participants feel that former Iowa residents would like to come back to Iowa but they don't have jobs. Extension could help in coordinating potential workers with potential employers.

• Topics for future training

Legal matters and regulations were of concern and represent a potential area for future

Iowa Business and Industry

Summary

workshops sponsored by ISU Extension. Some felt that they contacted the best CPA or the best attorney to give them guidance but they still had a question in their mind whether or not they were getting accurate information. These are smaller companies and they are trying to branch out and make new changes to find different markets. Also, participants were concerned about staying on top of regulations.

• Differing views for county staff

The role of the county staff person was discussed in detail, especially from some in agricultural business. They wanted the county person to be available but did not expect the county staff person to be a specialist--they typically didn't go to the county person for specific answers about problems. They would rather have a direct line to a specialist on campus or a 800 number where they can tap into that kind of information. They would like to have the county person involved in economic development or community problem solving.

Several different views were expressed on the importance of the local extension office. These views were often related to the nature of their business. Those with agricultural oriented businesses tended to see the local contact as important but those in manufacturing were less concerned about local contact.

A few wanted a local contact in an extension office whereas most seemed to prefer access to experts, usually via phone, regardless of where the expert was in the organization. Hierarchies or chains of command are not seen in a favorable light. These focus group participants prefer to go to whomever they believe is capable of solving the problem.

• Other ideas for accessing Extension resources

ISU Extension might put out a directory of opportunities within CIRAS or Extension citing what is available, where to call, whom to call and other details of the opportunities. These would be beneficial to business and industry and help them obtain assistance in a timely manner. Also suggested were videotapes, concise and specific printed materials and user-friendly technology.

• Office hours not seen as a concern

Business and industry were generally satisfied with existing Extension office hours but they encouraged flexibility. While other client groups had some preference for expanded hours or noon-time hours, the prevailing view among business representatives was for normal business hours.

• Concern about charging fees for services

The topic of charging fees for services provoked considerable discussion. In business and industry there is sensitivity about being in competition with other people who provide the same type of services as a business. There was no consensus on which direction to go other than some were saying we should charge a fee for some kinds of things, not charge for the wrong kinds of things and not have the amount excessive.

Business and industry people unfamiliar with ISU Extension are accustomed to paying for help, and they are surprised when they receive helpful assistance without charge from Extension. They don't expect to receive assistance for free.

Business and industry people usually expect to pay for things and the amount you pay is related to the quality of what you are getting. If it is free it is probably no good or of limited quality. It seems to be instinctive to them that good things are not given away free and quality costs.

• Find your niche

Evaluate strengths and weaknesses and find the niche for ISU Extension in business and industry. Focus on strengths and drop areas of weakness.

About the study

Focus groups were held in the communities of Des Moines and Waterloo with 19 frequent users of Extension and in Storm Lake and Tama with 10 limited users of Extension. The participants consisted of both men and women and were primarily smaller operators of business and industry with a mix of categories including feed mills, bankers, hospitals, manufacturers, home based businesses and others.

APPENDIX D. SURVEY QUESTIONNAIRE

BUSINESS AND INDUSTRY NEEDS QUESTIONNAIRE

Please indicate the degree to which you agree or disagree with the following statements by circling the appropriate number:

	Strongly Agree					Strongly Disagree	Don't Know
1. ISU Extension is a valuable resource for Iowa industry.	1	2	3	4	5	6	DK
2. There are many providers of similar services to Iowa industry.	1	2	3	4	5	6	DK
3. It would be a good idea for ISU Extension to be more involved in economic development efforts.	1	2	3	4	5	6	DK
4. I am not satisfied with current economic development efforts in Iowa.	1	2	3	4	5	6	DK
5. I feel that ISU Extension workers treat my inquiries with respect.	1	2	3	4	5	6	DK
6. When I talk to ISU Extension, they listen.	1	2	3	4	5	6	DK
7. ISU Extension assistance is personalized (one-to-one).	1	2	3	4	5	6	DK
8. ISU Extension assistance is unbiased.	1	2	3	4	5	6	DK
9. ISU Extension assistance is helpful.	1	2	3	4	5	6	DK
10. I think the Center for Industrial Research and Service (CIRAS) is a part of ISU Extension.	1	2	3	4	5	6	DK
11. I would like help finding qualified, industrious employees.	1	2	3	4	5	6	DK
12. I need good, up-to-date information on providing health care for employees.	1	2	3	4	5	6	DK
13. I need help identifying sources, other than banks, for funding.	1	2	3	4	5	6	DK
14. I believe Iowa businesses are poorly informed about extension programs.	1	2	3	4	5	6	DK
15. ISU Extension should use repeated, frequent advertising to inform me of their services.	1	2	3	4	5	6	DK
16. News releases on ISU Extension programs would be helpful to me. (over please)	1	2	3	4	5	6	DK

	Strongly Agree 1	2	3	4	5	Strongly Disagree 6	Don't Know DK
17. Regular mailings on ISU Extension programs would be helpful to me.							
18. ISU Extension should help former Iowans return to Iowa by matching them to Iowa jobs.	1	2	3	4	5	6	DK
19. I need training in legal matters.	1	2	3	4	5	6	DK
20. I am not confident that my private sources of professional advice are accurate.	1	2	3	4	5	6	DK
21. I need training to stay abreast of regulations.	1	2	3	4	5	6	DK
22. I do not usually go to the ISU Extension county office for specific information.	1	2	3	4	5	6	DK
23. I would prefer a toll-free telephone call to an ISU Extension specialist for specific information.	1	2	3	4	5	6	DK
24. The presence of the local county office is important to me.	1	2	3	4	5	6	DK
25. A directory of ISU Extension services and contacts would be useful.	1	2	3	4	5	6	DK
26. I would like more information provided on videotape.	1	2	3	4	5	6	DK
27. I would like to receive ISU Extension information in concise and specific printed materials.	1	2	3	4	5	6	DK
28. I would like ISU Extension offices to extend their hours.	1	2	3	4	5	6	DK
29. Most of my inquiries are made during regular business hours.	1	2	3	4	5	6	DK
30. I have used ISU Extension services at some time.	1	2	3	4	5	6	DK
31. I would expect to pay for ISU Extension services.	1	2	3	4	5	6	DK
32. I believe "you get what you pay for".	1	2	3	4	5	6	DK
33. I question the value of free advice.	1	2	3	4	5	6	DK
34. ISU Extension should focus on its strengths and drop weak programs.	1	2	3	4	5	6	DK
35. I would like to receive a summary of the responses to this survey.	YES	NO					

APPENDIX E. FIRST MAILING COVER LETTER

IOWA STATE UNIVERSITY⁹⁴
OF SCIENCE AND TECHNOLOGY
University Extension

Center for Industrial Research
and Service (CIRAS)
ISU Research Park, Suite 500
2501 North Loop Drive
Ames, Iowa 50010-8286
515 294-3420
FAX 515 294-4925
Telex 283359 IASU UR

December 3, 1991

Dear Iowa Businessperson,

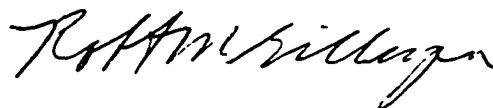
In our efforts to stay abreast of the needs of the Iowa business community, ISU Extension conducted a series of group interviews with representatives of business and industry this summer. The enclosed questionnaire is drawn from those interviews in order to verify the findings for our planning of client services. The data will also be used in a doctoral dissertation. It will only take about five minutes to complete and your input is critically important to us in ensuring that our programs are ones which benefit you.

Each questionnaire has an identifying number for follow-up if necessary. That number will be removed and destroyed after your answers are compiled to ensure the anonymity of your answers and only aggregate responses will be published. If you would like to receive a summary of the findings, please check the appropriate box on the last question. We will be happy to send it to you. If you have concerns or comments about the questionnaire please telephone me at the CIRAS office.

Your response is very important to us and will be sincerely appreciated. A postage-paid return envelope is enclosed for your convenience.

Thanks very much.

Sincerely,



Robert Gillespie
Industrial Specialist

APPENDIX F. SECOND MAILING COVER LETTER

IOWA STATE UNIVERSITY⁹⁶
OF SCIENCE AND TECHNOLOGY
University Extension

Center for Industrial Research
and Service (CIRAS)
ISU Research Park, Suite 500
2501 North Loop Drive
Ames, Iowa 50010-8286
515 294-3420
FAX 515 294-4925
Telex 283359 IASU UR

January 23, 1992

Dear Iowa Businessperson,

Just before Christmas we sent you a questionnaire intended to verify the findings of a series of group interviews we conducted last summer. The interviews sought to learn how well Iowa State University Extension programs are serving Iowa business and industry and to identify needs we are not meeting.

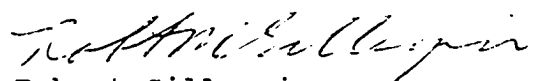
The busy holiday season was probably not a good time to add to your list of "things to do" so we are enclosing a second copy and hoping you can find time now to complete and return it. It will take less than five minutes. Your opinions are critically important to us and to the validity of the survey so your response will be sincerely appreciated.

The number on the questionnaire is for follow-up with non-respondents. After compilation, that number will be detached to ensure your anonymity and only aggregate responses will be published. If you would like to receive the summary findings, circle "yes" on the last question. If you have questions or concerns about the survey, please telephone me at the CIRAS office.

A postage-paid return envelope is enclosed for your convenience.

Thanks very much for your help.

Sincerely,


Robert Gillespie
Industrial Specialist

APPENDIX G. POSTCARD

February 3, 1992

Recently we mailed you a questionnaire seeking your opinions on how well Iowa State University Extension programs are serving Iowa business and industry needs.

If you have already completed and returned it, we sincerely appreciate your cooperation. If not, please do so today. Because it has been sent to a only a small but representative sample of Iowa businesses, it is extremely important that yours be included so that the results will accurately represent the views of the full group.

If you did not receive it or perhaps misplaced it, please call me collect at 515 294-5008 for a replacement.

Thanks very much.



Robert Gillespie

Industrial Specialist

APPENDIX H. SUMMARY OF RESPONSES

Summary of responses to business and industry needs questionnaire with mean scores (1=Strongly agree, 6=Strongly disagree), standard deviations, and percentages of unanswered questions.

	Mean	Standard Deviation	% Unanswered
1. ISU Extension is a valuable resource for Iowa industry.	2.175	1.170	12.9
2. There are many providers of similar services to Iowa industry.	4.141	1.367	37.8
3. It would be a good idea for ISU Extension to be more involved in economic development efforts.	2.689	1.345	11.1
4. I am not satisfied with current economic development efforts in Iowa.	3.015	1.451	6.9
5. I feel that ISU Extension workers treat my inquiries with respect.	2.043	1.011	25.3
6. When I talk to ISU Extension, they listen.	2.194	1.061	26.3
7. ISU Extension assistance is personalized (one-to-one).	2.184	1.052	27.2
8. ISU Extension assistance is unbiased.	2.303	1.170	28.6
9. ISU Extension assistance is helpful.	2.246	1.152	21.2
10. I think the Center for Industrial Research and Service (CIRAS) is a part of ISU Extension.	2.101	1.331	35.9
11. I would like help finding qualified, industrious employees.	3.147	1.573	9.2
12. I need good, up-to-date information on providing health care for employees.	3.020	1.603	5.5
13. I need help identifying sources, other than banks, for funding.	3.136	1.745	5.1
14. I believe Iowa businesses are poorly informed about extension programs.	2.162	1.171	9.2
15. ISU Extension should use repeated, frequent advertising to inform me of their services.	3.194	1.527	5.1
16. News releases on ISU Extension programs would be helpful to me.	2.493	1.251	2.8

(over please)

	Mean	Standard Deviation	% Unanswered
17.Regular mailings on ISU Extension programs would be helpful to me.	2.483	1.256	3.7
18.ISU Extension should help former Iowans return to Iowa by matching them to Iowa jobs.	2.979	1.513	10.6
19.I need training in legal matters.	3.668	1.491	8.3
20.I am not confident that my private sources of professional advice are accurate.	4.015	1.529	7.8
21.I need training to stay abreast of regulations.	2.867	1.310	2.8
22.I do not usually go to the ISU Extension county office for specific information.	2.524	1.568	2.3
23.I would prefer a toll-free telephone call to an ISU Extension specialist for specific information.	2.647	1.620	6.0
24.The presence of the local county office is important to me.	3.260	1.685	9.7
25.A directory of ISU Extension services and contacts would be useful.	2.014	1.198	.9
26.I would like more information provided on videotape.	3.582	1.522	10.6
27.I would like to receive ISU Extension information in concise and specific printed materials.	2.555	1.325	7.8
28.I would like ISU Extension offices to extend their hours.	4.777	1.009	31.8
29.Most of my inquiries are made during regular business hours.	1.985	1.152	8.3
30.I have used ISU Extension services at some time.	2.709	1.683	8.3
31.I would expect to pay for ISU Extension services.	3.920	1.303	13.8
32.I believe "you get what you pay for".	3.044	1.594	5.5
33.I question the value of free advice.	4.324	1.446	6.0
34.ISU Extension should focus on its strengths and drop weak programs.	2.821	1.590	17.5
35.I would like to receive a summary of the responses			

YES 122 NO 95

APPENDIX I. LETTER OF TRANSMITTAL FOR RESPONSE SUMMARY

IOWA STATE UNIVERSITY₁₀₃
OF SCIENCE AND TECHNOLOGY
University Extension

Center for Industrial Research
and Service (CIRAS)
ISU Research Park, Suite 500
2501 North Loop Drive
Ames, Iowa 50010-8286
515 294-3420
FAX 515 294-4925
Telex 283359 IASU UR

April 15, 1992

Dear Iowa Businessperson:

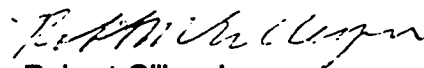
A few months ago you assisted us by completing a questionnaire regarding Iowa State University Extension programs for business and industry. We really appreciate your participation. You indicated on the questionnaire that you would like a summary of the findings so we have enclosed a list of the questions with the average (mean) scores of responses, the degree of variation (standard deviation) between individual responses, and the percentage of each question answered "don't know".

The principal purpose of the survey was to verify information obtained by another research technique called "group depth interview" or "focus group interview". Although there are some exceptions which lead us to caution, it appears that the method can be useful in determining the needs of Iowa businesses. It will also enable us to evaluate our programs quicker and with less inconvenience to you. Some of the findings are being used to develop new policies and programs for ISU Extension to Business and Industry.

If you have questions about the findings or would like to discuss them, please call me at 515-294-5008.

Thanks very much for your assistance!

Sincerely,



Robert Gillespie
Industrial Specialist

RG/sn

APPENDIX J. HUMAN SUBJECTS RESEARCH APPROVAL

Information for Review of Research Involving Human Subjects
Iowa State University

(Please type and use the attached instructions for completing this form)

1. Title of Project A test of the external validity of focus group research findings.
2. I agree to provide the proper surveillance of this project to insure that the rights and welfare of the human subjects are protected. I will report any adverse reactions to the committee. Additions to or changes in research procedures after the project has been approved will be submitted to the committee for review. I agree to request renewal of approval for any project continuing more than one year.

Robert M. Gillespie
 Typed Name of Principal Investigator

11/11/91
 Date

Signature of Principal Investigator

CIRAS
 Department

2501 North Loop, Ste. 500
 Campus Address

294-5008
 Campus Telephone

3. Signatures of other investigators John A. Hill Date 11/11 Relationship to Principal Investigator Major Professor

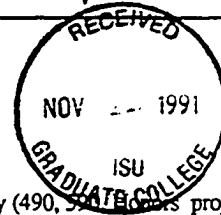
4. Principal Investigator(s) (check all that apply)
☐ Faculty ☒ Staff ☒ Graduate Student ☐ Undergraduate Student
5. Project (check all that apply)
☒ Research ☒ Thesis or dissertation ☐ Class project ☐ Independent Study (490, 540, Honors project)
6. Number of subjects (complete all that apply)
300 # Adults, non-students # ISU student # minors under 14 other (explain)
 # minors 14 - 17

7. Brief description of proposed research involving human subjects: (See instructions, Item 7. Use an additional page if needed.)

Focus group interviews have been used to assess the needs of ISU Business and Industry Extension clients. However, the generalizability of findings from such research is questioned. Conventional survey research will be employed to verify needs previously disclosed in the focus group interviews. The survey instrument (questions attached) will be mailed to a sample of 300 clients of ISU Business and Industry Extension, selected from the business and industry database of the Center for Industrial Research and Service using linear systematic sampling.

(Please do not send research, thesis, or dissertation proposals.)

8. Informed Consent: ☐ Signed informed consent will be obtained. (Attach a copy of your form.)
☒ Modified informed consent will be obtained. (See instructions, item 8.)
☐ Not applicable to this project.



9. Confidentiality of Data: Describe below the methods to be used to ensure the confidentiality of data obtained. (See instructions, item 9.)

Identifying numbers will be detached from the questionnaires after compilation and destroyed.

10. What risks or discomfort will be part of the study? Will subjects in the research be placed at risk or incur discomfort? Describe any risks to the subjects and precautions that will be taken to minimize them. (The concept of risk goes beyond physical risk and includes risks to subjects' dignity and self-respect as well as psychological or emotional risk. See instructions, item 10.)

No risk to the subjects is anticipated.

11. CHECK ALL of the following that apply to your research:

- ☐ A. Medical clearance necessary before subjects can participate
- ☐ B. Samples (Blood, tissue, etc.) from subjects
- ☐ C. Administration of substances (foods, drugs, etc.) to subjects
- ☐ D. Physical exercise or conditioning for subjects
- ☐ E. Deception of subjects
- ☐ F. Subjects under 14 years of age and/or ☐ Subjects 14 - 17 years of age
- ☐ G. Subjects in institutions (nursing homes, prisons, etc.)
- ☐ H. Research must be approved by another institution or agency (Attach letters of approval)

If you checked any of the items in 11, please complete the following in the space below (include any attachments):

Items A - D Describe the procedures and note the safety precautions being taken.

Item E Describe how subjects will be deceived; justify the deception; indicate the debriefing procedure, including the timing and information to be presented to subjects.

Item F For subjects under the age of 14, indicate how informed consent from parents or legally authorized representatives as well as from subjects will be obtained.

Items G & H Specify the agency or institution that must approve the project. If subjects in any outside agency or institution are involved, approval must be obtained prior to beginning the research, and the letter of approval should be filed.

Last Name of Principal Investigator Gillespie**Checklist for Attachments and Time Schedule**

The following are attached (please check):

12. ☒ Letter or written statement to subjects indicating clearly:
- a) purpose of the research
 - b) the use of any identifier codes (names, #'s), how they will be used, and when they will be removed (see Item 17)
 - c) an estimate of time needed for participation in the research and the place
 - d) if applicable, location of the research activity
 - e) how you will ensure confidentiality
 - f) in a longitudinal study, note when and how you will contact subjects later
 - g) participation is voluntary; nonparticipation will not affect evaluations of the subject
13. ☐ Consent form (if applicable)
14. ☒ Letter of approval for research from cooperating organizations or institutions (if applicable)
15. ☒ Data-gathering instruments

16. Anticipated dates for contact with subjects:

First Contact

Last Contact

11/26/91
Month / Day / Year11/26/91
Month / Day / Year

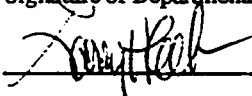
17. If applicable: anticipated date that identifiers will be removed from completed survey instruments and/or audio or visual tapes will be erased:

1/15/92
Month / Day / Year

18. Signature of Departmental Executive Officer

Date

Department or Administrative Unit

 11/16/91 Professional Studies

19. Decision of the University Human Subjects Review Committee:

☐ Project Approved☐ Project Not Approved☐ No Action Required

Patricia M. Keith
Name of Committee Chairperson

Date

Signature of Committee Chairperson